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Janet Shibata

PATENT
PD-201006A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of:

Donald C. D. Chang et al.

Serial No. 09/858,387 Group Art Unit: 2617

Filed: May 15, 2001 Examiner: Torres, Marcos L.

For: COMMUNICATION SYSTEM FOR MOBILE USERS USING ADAPTIVE ANTENNAS

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P. O. Box 1450
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BRIEF ON APPEAL

Sir:

The following Appeal Brief is being filed concurrently with the Notice of Appeal filed on January 28, 2010. Please apply the fees already paid on the previously filed brief to this brief.

I. Real Party in Interest

The real party in interest in this matter is The DIRECTV Group, Inc., of El Segundo, California.

II. Related Appeals and Interferences

There are no other known appeals or interferences which will directly affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III. Status of the Claims

Claims 1 and 3-22 are pending in the application and are appealed herein. Claim 2 has been cancelled.

IV. Status of Amendments

There have been no amendments filed subsequent to the response to the Office Action of October 28, 2009.

V. Summary of Claimed Subject Matter

Claim 1 is directed to a communication system that is generally illustrated in Figure 1 for communicating with mobile user terminal 16M. The system is generally described on page 5, lines 3-14.

The communication system includes a base station 18 described on page 5, line 26 through page 6, line 15 having an adaptive antenna 30 that is generally described on page 6, lines 1-5 and is illustrated in Figure 1. The adaptive antenna 30 has a plurality of panels 52 that are illustrated in Figures 2A-2D and is described on page 6, line 22 through page 9, line 23. Each of the panels 52 have a plurality of main array elements 56 or 222 of Figure 13 which are described on page 19, lines 8-25. Each panel has a different field of view. The main array elements 56

simultaneously generate a plurality of dynamic communication beams that move with the mobile terminals. This is generally described on page 6, line 22 through page 7, line 7.

The communication system 10 further includes a gateway station 20 that is described on page 6, lines 6-10 and page 6, lines 16-21. This is also illustrated in Figure 1. The gateway station 20 is coupled to a base station 18. The gateway station 20 forms a plurality of beam commands for each of the plurality of panels by communicating the plurality of control signals to the base station to form the plurality of dynamic communication beams. This is generally illustrated in Figures 8 and 13 and is described on page 12, line 18 through page 13, line 2 and page 20, lines 5-6.

Claim 3 depends on claim 1 and is generally illustrated in Figure 13. Claim 3 recites that the base station comprises a plurality of auxiliary elements 224 for cancelling interference between the plurality of dynamic communication beams. This is described on page 19, line 8 through page 20, line 9.

Claim 4 depends from claim 3 and recites that the plurality of auxiliary elements are weighted to provide interference cancelling. This is also illustrated in Figure 3 and is described on page 19, lines 21-25.

Claim 5 depends from claim 1 and recites that the gateway station 20 is RF coupled to the base station. This is described on page 6, lines 1-5.

Claim 6 depends from claim 1 and recites that the base station is wireless. This is described on page 6, line 4.

Claim 7 depends from claim 1 and recites that the gateway station 20 is positioned on the stratospheric platform. This is described on page 21, line 21.

Claim 8 depends from claim 1 and recites that the adaptive antenna 30 comprises a phased array antenna. This is described on page 7, lines 15-19.

Claim 9 depends from claim 1 and recites that the main array elements are modular and that each of the elements of each one of the panels covers the same field of view. This is illustrated in Figure 3 and is described on page 9, line 24 through page 10, line 2.

Claim 10 depends from claim 1 and recites that the main array antenna elements comprise a plurality of modules coupled to a bus. This is illustrated in Figure 3 and is described on page 9, line 24 through page 10, line 2. The bus is illustrated as reference numeral 60.

Claim 11 depends from claim 8 and recites that the bus 60 is coupled to a controller 68. This is also illustrated in Figure 3 and is described on page 9, line 24 through page 10, line 2.

Claim 12 depends from claim 1 and recites that the plurality of user terminals receives the plurality of dynamic communication beams. This is illustrated in Figure 1 and is described in on page 5, line 5-14.

Claim 13 depends from claim 1 and further comprises a limiter 176 coupled within a feedback path. This is illustrated in Figure 11 and is described on page 15, lines 22-24.

Claim 14 depends from claim 1 and recites a nulling processor. This is illustrated in Figure 13 and is described on page 19, lines 8-25.

Claim 15 depends from claim 14 and recites that the nulling processor comprises an element code despread 114 and a user code despread 120.

Claim 16 depends from claim 15 and recites that the nulling processor comprises a weighted feedback loop coupled to an output signal. This is described on page 19, lines 8-25.

Claim 17 depends from claim 15 and recites that the nulling processor comprises auxiliary elements coupled to an output signal. The auxiliary elements are illustrated as reference numeral 224 and are described on page 19, line 8 through page 20, line 9.

Claim 18 depends from claim 1 and recites that the base station 18 comprises a plurality of summing blocks 90 coupled to the main array element 74 for generating a sum signal. This is illustrated in Figure 7 and is described on page 12, lines 9-17. Claim 18 further recites that the gateway station 20 comprises an analog-to-digital converter 106 coupled to a noise injection circuit and the sum signal. The sum signal is coupled to a demultiplexer 108 and a digital beam forming circuit. The elements of the gateway station described above are illustrated in Figure 8 and are described on page 12, line 18 through page 13, line 2.

Claim 19 depends from claim 1 and recites that the base station comprises a user code despreading circuit 114 coupled to an element code despreading circuit 120 which is coupled to the main array elements 56 or 222. This is illustrated in Figure 9 and is described on page 13, line 10 through page 14, line 7.

Claim 20 is an independent claim that includes a plurality of wireless base stations 18 described on page 5, line 26 through page 6, line 15. The base stations have adaptive antennas 30 each having a plurality of panels 52 that are illustrated in Figures 2A-2D and are described on page 6, line 22 through page 9, line 23. Each panel 52 has a plurality of main array elements 56 or 222 of Figure 13. Each panel has a different field of view. The main array elements are also described on page 19, lines 8-25. Each panel simultaneously generates a plurality of dynamic communication beams that move with the mobile terminals. This is described on page 6, line 22 through page 7, line 7.

Claim 20 also includes a gateway station 20 coupled to the plurality of wireless base stations through a plurality of multiple dynamic links. The gateway station forms a plurality of beams for each of the plurality of panels by communicating a plurality of control signals to the base station from the plurality of dynamic communication beams so that a user receives a first link from a first base station of the plurality of wireless base stations in a second link from the second base station of the plurality of wireless base stations. This is generally shown in Figures 8 and 13 and is described on page 12, line 18 through page 13, line 2. This is also described on page 20, lines 5-6.

Claim 21 is an independent claim that is directed to a method of operating a communication system having a gateway station 20 coupled to a plurality of mobile terminals 16M in a plurality of base stations 18. The method includes that the gateway station 20 dividing a communication signal into a control signal corresponding to a plurality of elements of a plurality of panels 52 of a plurality of adaptive antennas 30 of the plurality of base stations 18. The control signals correspond to a plurality of multiple dynamic links. The base station is illustrated in Figure 1 and is described on page 5, line 26 through page 6, line 15. The adaptive antennas are illustrated as reference numeral 30 in Figure 1 and are described on page 6, lines 1-5. The plurality of panels are illustrated as reference numeral 52 in Figures 2A-2B and are described on page 6, line 22 through page 9, line 23 as having different fields of view.

Claim 21 further recites the step of directing the control signals to the plurality of base stations 18. This is described on page 20, lines 5-6.

Claim 21 further recites generating multiple dynamic links from the plurality of panels of the plurality of base stations so that more than one dynamic link is generated simultaneously from one panel that moves with the mobile terminals. This is described on page 7, line 13-20.

Claim 22 depends from claim 21 and recites the further step of cancelling interference between the multiple dynamic links. This is illustrated in Figure 13 and is described on page 19, lines 21-25.

VI. Grounds of Rejection to be Reviewed on Appeal

The following issues are presented in this appeal:

Whether Claims 1, 3-12, 14, and 20-22 are unpatentable under 35 U.S.C. §103(a) over *Gross* (6,507,739) in view of *Katz* (6,393,303).

Whether Claim 13 is unpatentable under 35 U.S.C. §103(a) over *Gross* (6,507,739) in view of *Katz* (6,393,303)and in further view of *Kasperkovitz*.

Whether Claims 15-17 and 19 are unpatentable under 35 U.S.C. §103(a) over *Gross* (6,507,739) in view of *Katz* (6,393,303) and in further view of *Agee* (6,128,276).

Whether Claim 18 is unpatentable under 35 U.S.C. §103(a) over *Gross* (6,507,739) in view of *Katz* (6,393,303) and in further view of *Janc* (4,893,310) and *Sayegh* (2006/0084541A).

VII. Argument

The rejection of Claims 1, 3-12, 14, 20-22 as unpatentable under 35 U.S.C. §103(a) over *Gross* (6,507,739) in view of *Katz* (6,393,303)

Claim 1

Claim 1 recites a base station having an adaptive antenna with a plurality of panels. Claim 1 was amended to recite that the plurality of panels are arranged to have different fields of view. On page 6 of the Office Action, the Examiner states that the term "field of view" can be interpreted in several ways such as pointing field of view or coverage [area] field of view. The Examiner refers to Fig. 1 and item 140 of the *Gross* reference. Appellants believe that the terminology field of view is evident from the specification. In particular, Fig. 40 and Fig. 2A both refer to the field of view. Paragraph 71 also mentions the field of view in that the elements

share the same field of view as every other element on the panel. Also, the claim states, "each of the plurality of panels arranged to have a different field of view." Thus it is clear that the panels each have different fields of view over the array of elements. When taken in context, the plurality of dynamic beams moves with the mobile terminals. The field of view is the extent that a particular panel can track a user. Beyond the field of view, the next panel must be used. Thus, Appellants believe that the field of view is narrower than the definition suggested by the Examiner.

The *Gross* reference includes panels that are pointed in the same direction. Although moving beams is taught, controlling beams in multiple panel of an adaptive antenna is not taught. Appellants believe that the panels have the same field of view. The Katz reference does not teach a system that controls beam directions of a plurality of adaptive antenna panels to track ground mobile users from a gateway station.

Further, Applicants respectfully submit that the combination of Gross and Katz is improper. For example, the Examiner alleges that "it would have been obvious to one of the ordinary skill in the art at the time of this invention to add this teaching to the Gross apparatus for having a modular system with enhanced coverage."

This brief explanation falls far short of the type of **explicit analysis** that is required by the Supreme Court in *KSR Int'l v. Teleflex Inc.*, 127 S.Ct. 1727 (2007). Absent such an express teaching or suggestion in the references, the explicit analysis and reasoning must be supplied by the Examiner. *Id.* In other words, the Examiner is required to provide explicit reasoning as to why one skilled in the art would be motivated to modify the control provided in a satellite system to include a multiple panel antenna cellular system. Here, the Examiner merely notes that "it would have been obvious to one having ordinary skill in the art at the time the invention was

made to "add this teaching to the Gross apparatus for having a modular system with enhanced coverage" and fails to provide explicit analysis and reasoning as required. The combination formed by the Examiner would be a satellite system. Multiple panels with different fields of view would not make sense in a satellite system since the field of view from such a far away perspective should be the same (downward toward earth).

For example, Gross discloses a satellite system. In contrast, Katz discloses a cellular system that includes multiple panels. Both are communication systems but due to the physical relationship of satellite to the earth must be configured or operate in a different manner. More specifically, there is no motivation or suggestion to combine Gross, which is directed to a satellite system, with Katz, which is an Earth based system.

Claim 3

Claim 3 recites that the "base station comprises a plurality of auxiliary elements for canceling interference between the plurality of dynamic communication beams." The Examiner points to column 4, lines 38-64 of the *Gross* reference for this teaching. Column 4, lines 49-53 are particularly relevant. In this passage, the shaping of beams, such as the shaping of the main lobe and sides lobes, is described. What is not taught or suggested in *Gross* is that auxiliary elements are used for cancelling interference between the plurality of dynamic communication beams. Therefore, Appellants respectfully request the Board to reverse the Examiner's rejection of claim 3.

Claim 4

Claim 4 depends from claim 3 and recites that the auxiliary elements are weighted to provide interference cancelling. The Examiner points to column 4, lines 38-64 of the *Gross* reference for this teaching. As mentioned above, there is no teaching for a "plurality of auxiliary

elements," let alone a "plurality of auxiliary elements [that] are weighted to provide interference canceling," as set forth in claim 4. Therefore, Appellants respectfully request the Board to reverse the Examiner's position with respect to claim 4 as well.

Claim 5

Claim 5 includes the gateway station being RF coupled to the base station. Claim 5 stands or falls with claim 1.

Claim 6

Claim 6 recites that the base station is wireless. Claim 6 stands or falls together with claim 1.

Claim 7

Claim 7 depends from claim 1 and recites that the "gateway station is positioned on a stratospheric platform." The Examiner points to column 3, lines 55-63 for a stratospheric platform. However, this passage merely refers to terrestrial-based equipment or satellites and not a stratospheric platform. A stratospheric platform is different than a satellite because a stratospheric platform is positioned substantially lower than a satellite: a stratospheric platform may be positioned in the range of about 60,000-100,000 feet above the earth's surface versus a low-earth-orbit satellite positioned about 700 miles above the surface of the earth. Therefore, the Board is respectfully requested to reverse the Examiner's position with respect to claim 7.

Claim 8

Claim 8 recites that the antenna is a phased array antenna. This claim stands or falls together with claim 1.

Claim 9

Claim 9 recites that the main array elements are modular and that each of the elements of each of the panels cover the same field of view. Column 1, lines 4-8 and column 4, lines 46-58 of *Katz* does mention array antennas that are modular but the field of view is not described. Also, no teaching or suggestion is provided for combining the *Katz* reference with the *Gross* reference. Appellants, therefore, respectfully request the Board to reverse the Examiner's position with respect to claim 9.

Claim 10

Claim 10 recites that the main array antenna elements comprise a plurality of modules coupled to a bus. The Examiner points to the *Gross* reference at Figure 2, Items 202-214 for teaching a bus. The description of Figure 2 begins in column 3, line 56 through column 5, line 36 and there appears to be no teaching or suggestion that the components are coupled together through a bus. The various components appear to be in communication but not through a bus. Appellants, therefore, respectfully request the Board to reverse the Examiner's position with respect to claim 10 as well.

Claim 11

Claim 11 depends from claim 10 and recites that a bus is coupled to the controller. The Examiner points to the same elements in *Gross* for the bus as in the rejection of claim 10. Although computing equipment is taught in the *Gross* reference, no teaching or suggestion is provided for a bus coupled to a controller. Therefore, Appellants respectfully request the Board to reverse the Examiner's position with respect to claim 11.

Claim 12

Claim 12 depends from claim 1 and further recites a plurality of user terminals receiving the plurality of dynamic communication beams. Claim 12 stands or falls together with claim 1.

Claim 14

Claim 14 stands or falls together with claim 1.

Claim 20

Claim 20 is similar to claim 1 in that each of the panels may generate more than one dynamic link from a panel. Claim 20 is different in that two links from two different base stations are directed to a user. As mentioned above, the combination of the *Gross* and *Katz* references has several deficiencies. Claim 20 is also different in that it recites "a plurality of wireless base stations" and that the "gateway station ... [communicates] a plurality of a control signals to the base station to form the plurality of dynamic communication beams so that a user receives at least a first link from a first base station of the plurality of wireless base stations and a second link from a second base station of the plurality of wireless base stations." The wireless base stations having antenna elements with fields of view are discussed above in the arguments for claim 1.

Claim 20 recites "a plurality of wireless base stations." The Examiner points to element 110 for a plurality of wireless base stations; however, element 110 refers to a satellite. As mentioned above, claim 20 recites that "each of the plurality of panels [are] arranged to have a different field of view." This is not taught or suggested in the *Gross* reference. For the gateway station, the Examiner, again, points to element 110 and a number of different passages. One passage is column 10, lines 8-36, which refers to Figure 9. Figure 9 illustrates the relative motion of a satellite footprint. The motion is illustrated by the arrow 904. Although handoffs

are described, there is no teaching for a gateway station that communicates control signals to the base stations to form dynamic links so that a user receives at least a first link from a first base station and a second link from a second base station. Therefore, Appellants respectfully request the Board to reverse the Examiner's position with respect to claim 20 as well.

Claim 21

Claim 21 is another independent claim that is directed to a method similar in scope to claim 20. In fact, claim 21 recites "generating multiple dynamic links from the plurality of panels of the plurality of base stations so that more than one dynamic link is generated simultaneously from one panel that moves with the mobile terminals." As mentioned above, neither reference teaches or suggests simultaneously generating more than one beam from a panel. Therefore, Appellants respectfully request the Board to reverse the Examiner's position with respect to claim 21 as well.

Claim 22

Claim 22 depends from claim 21 and recites interference cancelling. Although interference cancelling is known, there is no teaching or suggestion for interference cancelling between multiple dynamic links with the limitations set forth in claim 21. In fact, *Gross* column 3, lines 23-32 teaches interference resistant channels that have sidelobe properties that minimize inference. However, there is no teaching or suggestion for actively cancelling interference between the multiple dynamic links, rather than just minimizing interference, as set forth in the column 3. Therefore, Appellants respectfully request the Board to reverse the Examiner's position with respect to claim 22 as well.

The rejection of claims 9-10 under 35 U.S.C. §103(a) over Gross (6,507,739) in view of Katz (6,393,303) and in further view of Kasperkovitz

Claim 13

Claim 13 depends from claim 1 and recites a limiter coupled within a feedback path. As mentioned above, the *Gross* and *Katz* references have several limitations. The *Kasperkovitz* reference is directed to a phase lock loop for a directly mixing synchronous AM receiver. Claim 13 recites that a limiter is coupled to a feedback path. Appellants agree that a limiter LA is shown in Fig. 1. However, the limiter is not in a feedback path. A feedback path feeds the output of a control system back to an input to the control system. In the Final Office Action, the Examiner states that "Regarding Appellants' argument that *Kasperkovitz* does not teach a limiter in a feedback path, claim 13 recites a limiter coupled within a feedback path." Still, Appellants respectfully submit that the limiter must be within the feedback path. Therefore, no teaching or suggestion is provided for a limiter in a feedback path. Appellants, therefore, respectfully request the Board to reverse the Examiner's position with respect to claim 13.

The rejection of claims 15-17 and 19 under 35 U.S.C. §103(a) over Gross (6,507,739) in view of Katz (6,393,303) in further view of Agee (6,128,276)

Claim 15

Claim 15 recites that the nulling processor comprises an element code despread and a user code despread. The Examiner points to column 23, lines 7-29 and column 11, lines 33-48. Claim 15 specifically recites element code despread and user code despread. Although despreading is mentioned, no teaching or suggestion is provided for element code despread and user code despread as set forth in claim 15. Therefore, Appellants respectfully request the Board to reverse the Examiner's position with respect to claim 15.

Claim 16

Claim 16 depends from claim 15 and recites that a weighted feedback loop is coupled to an output signal. Weighting is also specifically set forth in column 11 of the *Agee* reference. However, the weighting illustrated in Figure 8 as reference numeral 240 does not appear to be within a feedback loop. Therefore, Appellants respectfully request the Board to reverse the Examiner's position with respect to claim 16 as well.

Claim 17

Claim 17 recites that the nulling processor comprises auxiliary elements coupled to an output signal. Appellants can find no teaching or suggestion for auxiliary elements in the *Agee* reference. Therefore, Appellants respectfully request the Board to reverse the Examiner's position with respect to claim 17 as well.

Claim 19

Claim 19 recites that the base station comprises a user code de-spreading circuit coupled to an element code de-spreading circuit which is coupled to the main array elements. As mentioned above with respect to claim 15, there is no teaching or suggestion for user code de-spreading and element code de-spreading. Therefore, Appellants respectfully request the Board to reverse the Examiner's position with respect to claim 19 as well.

The rejection of claim 18 under 35 U.S.C. §103(a) over Gross (6,507,739) in view of Katz (6,393,303) and further in view of Janc (U.S. Patent No. 4,893,316) and further in view of Sayegh (U.S. Pub. 20060084541A)

Claim 18

Although the additional two references provide some of the teachings, each of these references does not provide the elements missing from the *Gross and Katz* references nor the motivation to form the combination. That is, no teaching or suggestion is provided in any of the

additional two references for forming an adaptive antenna with a plurality of panels, each having a plurality of reconfigurable main array elements for generating a plurality of communication beams that are formed by control signals from a gateway station that form beam commands for each of the plurality of panels. Appellants, therefore, respectfully request the Board to reverse the Examiner's position with respect to claim 18 as well.

VIII. Claims Appendix

A copy of each of the claims involved in this appeal, namely claims 1 and 3-22 is attached as a Claims Appendix.

IX. Evidence Appendix

None.

X. Related Proceedings Appendix

None.

Conclusion

For the foregoing reasons, Appellants respectfully request that the Board direct the Examiner in charge of this examination to withdraw the rejections.

Please charge any fees required in the filing of this appeal to Deposit Account 50-0383.

Respectfully submitted,

Dated: January 28, 2010

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VIII. Claims Appendix

1. (Previously Presented) A communications system for communicating with mobile user terminals comprising:

a base station having an adaptive antenna with a plurality of panels, each of the plurality of panels arranged to have a different field of view, each panel having a plurality of main array antenna elements for simultaneously generating a plurality of dynamic communication beams that move with the mobile terminals; and

a gateway station coupled to said base station, said gateway station forming a plurality of beams commands for each of the plurality of panels by communicating a plurality of control signals to the base station to form the plurality of dynamic communication beams.

2. (Canceled)

3. (Previously Presented) A communications system as recited in claim 1 wherein said base station comprises a plurality of auxiliary elements for canceling interference between the plurality of dynamic communication beams.

4. (Previously Presented) A communications system as recited in claim 3 wherein said plurality of auxiliary elements are weighted to provide interference canceling.

5. (Original) A communications system as recited in claim 1 wherein said gateway station is RF coupled to said base station.

6. (Original) A communications system as recited in claim 1 wherein said base station is wireless.

7. (Previously Presented) A communications system as recited in claim 1 wherein said gateway station is positioned on a stratospheric platform.

8. (Previously Presented) A communications system as recited in claim 1 wherein said adaptive antenna comprises a phased array antenna.

9. (Previously Presented) A communications system as recited in claim 1 wherein said main array antenna elements are modular and wherein the main array elements for each one of the plurality of panels covers the same field of view.

10. (Previously Presented) A communications system as recited in claim 1 wherein said main array antenna elements comprise a plurality of modules coupled to a bus.

11. (Previously Presented) A communications system as recited in claim 10 wherein said bus is coupled to a controller.

12. (Previously Presented) A communications system as recited in claim 1 further comprising a plurality of user terminals receiving said plurality of dynamic communication beams.

13. (Original) A communications system as recited in claim 1 further comprising a limiter coupled within a feedback path.

14. (Original) A communications system as recited in claim 1 further comprising a nulling processor.

15. (Original) A communications system as recited in claim 14 wherein said nulling processor comprises an element code despread and a user code despread.

16. (Previously Presented) A communications system as recited in claim 15 wherein said nulling processor comprises a weighted feedback loop coupled to an output signal.

17. (Previously Presented) A communications system as recited in claim 15 wherein said nulling processor comprises auxiliary elements coupled to an output signal.

18. (Original) A communications system as recited in claim 1 wherein said base station comprises a plurality of summing blocks coupled to said main array element for generating a summed signal, said gateway station comprising an analog-to-digital converter coupled to a noise injection circuit and said summed signal, said summed signal coupled to a demultiplexer and a digital beam forming circuit.

19. (Original) A communication system as recited in claim 1 wherein said base station comprises a user code despreading circuit coupled to an element code despreading circuit which is coupled to said main array elements.

20. (Previously Presented) A communications system for communicating with mobile user terminals comprising:

a plurality of wireless base stations having adaptive antennas each having a plurality of panels, each of the plurality of panels arranged to have a different field of view, each panel having a plurality of main array antenna elements, each panel simultaneously generating a plurality of dynamic communication beams that move with the mobile terminals;

a gateway station coupled to said plurality of wireless base stations through a plurality of multiple dynamic links, said gateway station forming a plurality of beams for each of the plurality of panels by communicating a plurality of a control signals to the base station to form the plurality of dynamic communication beams so that a user receives at least a first link from a first base station of the plurality of wireless base stations and a second link from a second base station of the plurality of wireless base stations.

21. (Previously Presented) A method of operating a communication system having a gateway station, a plurality of mobile terminals and a plurality base station comprising:

at the gateway station, dividing a communication signal into a control signal corresponding to a plurality of elements of a plurality of panels of a plurality of adaptive antennas of a plurality of base stations, the plurality of panels each arranged to have a different field of view, said control signals corresponding to a plurality of multiple dynamic links;

directing the control signals to the plurality of base stations; and

generating multiple dynamic links from the plurality of panels of the plurality of base stations so that more than one dynamic link is generated simultaneously from one panel that move with the mobile terminals.

22. (Original) A method as recited in claim 21 further comprising canceling interference between said multiple dynamic links.

IX. Evidence Appendix

None.

X. Related Proceedings Appendix

None.